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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CHANG, VICTOR S	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
01/18/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/646,364	ANDERSON ET AL.	
	Examiner	Art Unit	
	Victor S. Chang	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6-19,21-24,76-91 and 110-113* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6-19,21-24,76-91 and 110-113* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. Applicants' amendments and remarks filed on 11/2/2007 have been entered. Claims 1, 6, 7, 9, 12, 21, 22, 76 and 91 have been amended. Claims 2-5, 20, 25-75 and 92-109 have been cancelled. New claims 110-113 have been entered. Claims 1, 6-19, 21-24, 76-91 and 110-113 are active.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. In response to the amendments, the grounds of rejection have been updated as set forth below.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 6-13, 17-19, 21-23, 110 and 111 are rejected under 35 U.S.C. 102(b) as being anticipated by Dumbauld [US 5070111].

Dumbauld's invention relates to a foam thermoplastic elastomer. The foam has a low density and a high percentage of closed cells [abstract]. The thermoplastic elastomers are blends of crystalline polyolefin plastic and rubber. Typical crystalline polyolefin plastics include

polypropylene, etc. [col. 1, ll. 31-42]. Rubbers useful in the foamed blends include EPDM, etc. [col. 1, ll. 46-47]. A density reduction of from 10% to 70%, based on the density of the starting composition, is achieved [col. 2, ll. 45-49]. Water absorption was tested by immersing (submersing) the foam in water for 24 hours and measuring the weight gain. Low values of water-absorption indicate that a high proportion of the cells are closed cells. A high proportion of closed cells is particularly advantageous for applications such as automotive door seals [col. 3, ll. 46-52]. Table I shows that the water absorption ranges from 1.4 to 17.8%. It is preferred that the rubber be at least partially cured, and more preferred that it be fully cured (vulcanized) [col. 2, ll. 5-6].

For claims 1, 6, 7, 9, 10, 17-19 and 21-23, nowhere does Dumbauld disclose that an auxiliary layer is required for applications such as automotive door seals.

For claims 8 and 11-13, since Dumbauld teaches a density reduction of from 10% to 70%, based on the density of the starting composition, and the density of the polymer blends is reasonably estimated slightly below 1 g/cm^3, clearly Dumbauld anticipates the claimed foam densities.

For claims 110 and 111, nowhere does Dumbauld disclose that a melt strength enhancing additive is required for making the foam thermoplastic elastomer.

6. Claims 14-16, 24, 76-91, 112 and 113 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Dumbauld [US 5070111].

The teachings of Dumbauld are again relied upon as set forth above.

For claims 14-16, Dumbauld is silent about the average cell size. However, since Dumbauld teaches the same subject matter for the same use as the claimed invention, a workable

cell size is deemed to be either anticipated by Dumbauld, or obviously provided by practicing the invention of prior art, dictated by the same utility.

For claims 24, 76-88, 91, 112 and 113, Dumbauld is silent about the water absorption value of the foam thermoplastic elastomer by U-test. However, since Dumbauld teaches the same subject matter for the same use as the claimed invention, and teaches that the foam has a low water absorption value by submersion test, a workable water absorption value measured by U-test is deemed to be either anticipated by Dumbauld, or obviously provided by practicing the invention of prior art, dictated by the same utility. It should be noted that the wide disparity in water absorption value between the submersion test and U-test values for the same foam material are consistent with the results shown in Table I of the present application.

For claims 89 and 90, similarly, since Dumbauld teaches the same subject matter for the same use as the claimed invention, a workable hardness is deemed to be either anticipated by Dumbauld, or obviously provided by practicing the invention of prior art, dictated by the same utility.

Response to Arguments

7. The Noel reference has been withdrawn. Applicants' arguments directed to Noel are moot.

Applicants argue at Remarks page 7 that

> "It appears that the water absorption testing described in Dumbauld was conducted without any vacuum being applied. In contrast, in the context of the present application, "complete submersion water absorption," is measured by completely immersing an entire sample in water under high vacuum, for example according to ASTM D 1056 Sections 42 through 48 (See page 6, last paragraph). The absence of an applied vacuum in the testing described in Dumbauld would be expected to lead to significantly lower water absorption

> values as compared to values measured on the same sample using a "complete submersion" test as described in the present application."

However, absence of any evidentiary support regarding how vacuum would have affected the test results, applicants appear to be analyzing Dumbauld in vacuum. Contrary to applicants' argument, while the specification lacks a clear description how vacuum is applied over an immersed foam, it appears that a vacuum would have been applied over the water surface, and one skilled in the art would have reasonably expected that under a vacuum there would be a lower pressure of water onto the foam surface, or a less driving force to promote water absorption into the foam. Even if Dumbauld's immersion test is carried out without vacuum, it is unseen that how a significant lower water absorption can be expected under a higher water pressure to the foam surface.

Applicants argue at page 8 that

> "Applicant sees no reason why the claimed U-test water absorption would have been met in Dumbauld, particularly since, as noted above, the water absorption testing in Dumbauld appears to have been done without any vacuum applied. Claim 76, and its dependent claims, recite a U-test water absorption value, and, thus, are patentable in view of Dumbauld."

However, since Dumbauld teaches the same subject matter for the same use as the claimed invention, and teaches that the foam has a low water absorption value by submersion test, a workable water absorption value measured by U-test is deemed to be either anticipated by Dumbauld, or obviously provided by practicing the invention of prior art, dictated by the same utility. It should be noted that the wide disparity in water absorption value between the submersion test and U-test values for the same foam material are consistent with the results shown in Table I of the present application.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 7:00 am - 5:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1794